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AN EVALUATION OF DTIC'S PROTOTYPE
CD-ROM

Thomas Lahr
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August 1989

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REPORT DOCUMENTATION PAGE

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1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE Aug 88	3. REPORT TYPE AND DATES COVERED Final	
4. TITLE AND SUBTITLE An Evaluation of DTIC's Prototype CD-ROM			5. FUNDING NUMBERS	
6. AUTHOR(S) Thomas Lahr, Dennis O'Connor				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Defense Technical Information Center Cameron Station Alexandria, VA 22304-9956			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) Defense Technical Information Center Cameron Station Alexandria, VA 22304-9956			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) In early FY 88, DTIC initiated a project with the Logistics Management Institute (LMI) to design and produce a prototype compact-disc-read-only memory (CD-ROM). The project's major objective was to assess the feasibility and costs of disseminating TR citations data in CD-ROM format to DoD Technical Libraries for retrospective searching. The project team evaluated commercial CD-ROM products and discussed design requirements with the Resource Sharing Advisory Group (RSAG). Based on specifications derived from this analysis, a contract was established through FEDLINK with ONLINE Computer Systems to produce a prototype disc that would contain citations from the TR database accessioned from Jan 82 - Sep 88. The prototype disc was mastered in Jan 89 and contains approximately 190,000 citations. Eighty copies of the disc were replicated. Discs were distributed to 18 DROLS sites and evaluated by 30 individuals. This report evaluates the prototype disc and provides recommendations concerning a production disc. Responses to the evaluation survey sent to all prototype users are summarized.				
14. SUBJECT TERMS CD-ROM, Prototyping, User Surveys			15. NUMBER OF PAGES	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT U	18. SECURITY CLASSIFICATION OF THIS PAGE U	19. SECURITY CLASSIFICATION OF ABSTRACT U	20. LIMITATION OF ABSTRACT	

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ACKNOWLEDGMENTS

We would like to thank the following people for their contribution to this project:

- Allan Kuhn, DTIC-SPO
- Karen Kaye, Control Data Corporation
- Carol Jacobson, DTIC-E
- The test sites who responded to the evaluation survey.

INTRODUCTION

In early FY88, the Defense Technical Information Center (DTIC) initiated a project with the Logistics Management Institute (LMI) to design and produce a prototype compact-disc – read-only memory (CD-ROM). The project team evaluated commercial CD-ROM products and discussed design requirements of the prototype disc with the Resource Sharing Advisory Group (RSAG). Based on specifications derived from this analysis, DTIC established a contract with Online Computer Systems to produce a prototype disc. Mastered in January 1989 and containing approximately 200,000 citations from the Technical Reports database, the disc was evaluated by 30 individuals at 18 DROLS sites.

This report evaluates the prototype disc and makes recommendations concerning a production disc. In Chapter 1, we summarize responses to the evaluation survey sent to all prototype users. In Chapter 2, we discuss problems which the project team and test sites encountered in the production and installation of the disc. In Chapter 3, we discuss issues which DTIC should consider before committing itself to a production CD-ROM product. Complete responses to the evaluation survey are compiled in Appendix A.

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CHAPTER 1

USER REACTION

a. Survey Administration

DTIC selected the original CD-ROM test sites – AFWL, NRL, and TRADOC – from among interested RSAG members. Additional sites, including the Naval Academy, National Security Agency and Naval Surface Weapons Center, were selected later. All test sites were registered DoD DROLS users, had already installed a CD-ROM reader at their site, and were interested in testing and evaluating the prototype disc.

We mailed questionnaires to the test sites in early May, except the TRADOC questionnaires which were mailed in early June. Survey forms were sent to 28 sites.

b. Summary of Survey Responses

As of mid-August 1989, 30 individuals from 17 sites had responded. We provide highlights of their responses below and a compilation of all responses in Appendix A.

- How disc was used. Twenty-four of the respondents used the disc for bibliographies searches, 16 for document identification, 3 for cataloging, 13 for evaluation purposes, 2 as a teaching medium, and 1 to identify the agency's holdings in DROLS.
- Other CD-ROM products used/Comparison with DTIC's disc. The most widely used CD-ROM product among the test sites was Bowker's "Books in Print" (10 sites). The only other product used by more than 1 site was Ulrich's.

One reason we selected Online Computer Systems to master the DTIC disc was because their software is used on "Books in Print." Thus, all "Books in Print" users would immediately be familiar with the user interface on DTIC's disc. For this reason, when asked to compare the DTIC disc to other CD-ROM products, many simply said that it was "about the same" or "pretty similar."

- Disc users. The primary users at the test sites were librarians, particularly reference librarians, and library technicians.

- Time spent using disc. Seventeen respondents used the disc for a total of less than 5 hours, four used it for 5 to 10 hours, and eight for more than 10 hours.
- Brand of CD-ROM reader used. Of the 20 sites, 13 used Philips/LMSI readers, 5 used Hitachi, and 2 left the question blank. The only Sony drive was that used by DTIC.
- Monitor/PC configuration. Eight respondents used color monitors and 19 used monochrome. All sites ran the CD-ROM on a personal computer having a hard drive and at least one floppy disk drive.
- Disc installation. Nine respondents had trouble installing the disc, primarily because they lacked the necessary device driver. (See section 2b below for a description of this problem.) Some sites also needed help in modifying system files on their PC. (See section 2a below.) Once these initial problems were resolved, the disc ran smoothly at all sites.
- Documentation. Except for disc installation procedures, the sites were generally satisfied with the documentation.
- User interface. All but one of the thirty respondents found the user interface easy to learn. Twenty-six sites also found it easy to use.
- Most useful features of the disc. The respondents found the disc useful in several ways. Among the features mentioned were: easy to use, saves time and money compared to DROLS, expanded search features (keyword/subject searching of abstract and other fields, ability to combine search strategies), ability to print unattended and to save citations on disk, browsing capabilities, good backup to DROLS, additional display formats, ability to search all numeric fields simultaneously.
- Least useful features of the disc. Several features were mentioned: limited number of search sets which can be retained at one time, lack of holding symbol (field 49), limited timeframe of citations of the disc, lack of instruction in defining custom format, inability to order documents, inability to search multiple words as a phrase, lack of classified data and WUIS/IR&D data, and inability to specify ranges for Report Date searches.
- Functions to add to the disc. Relatively few suggestions were made, despite the many limitations identified in the previous question. Among those listed were: capability to order documents, expanded time periods, a "panic" key to stop printing of citations, mouse interface, hierarchy function, and a standard bibliographic output format.
- Price of disc. The majority of organizations wanted the disc produced quarterly or semi-annually and would be willing to pay between \$300 and \$750 for an annual subscription. A few sites would be willing to pay more than \$750; none would pay more than \$1500. A disc produced only once a

year would be much less useful than a quarterly or semi-annual product. A few sites could not support both DROLS and CD-ROM.

- Single or multiple disc product. Twenty respondents preferred a multi-disc CD-ROM product which would provide from 10 to 35 years of DROLS data. Seven respondents would be satisfied with a single disc offering the most recent 5-6 years of data.
- CD-ROM features preferable to DROLS. Respondents named several features which they preferred to DROLS: retrieval speed, no time/cost pressure, simpler retrieval formats (e.g. no "@STR@" format) and fewer commands to remember, windowing capability, choice of novice or expert level, ability to combine search sets, truncation, no downtime, posting browse statements to the search workspace, ability to change display formats easily, use of mnemonics in place of role codes, and ability to search abstracts.
- DROLS features preferable to CD-ROM. Respondents also liked many DROLS features better than the CD-ROM: access to WUIS, ability to order documents, more current data, hierarchy searching, ability to display in scroll mode, ability to search multiple words without overloading search workspace, and less clutter than window interface.
- Comparison of CD-ROM retrieval times with DROLS. The majority of users said that the CD-ROM was either somewhat or significantly faster than the DROLS TR database. One site said that DROLS was faster for subject queries; another found that CD-ROM was significantly faster than dial-up but slower than dedicated line.
- Other comments and suggestions. We received several interesting responses to this question. One site suggested that the password typed to the screen should be invisible; another suggested that a training manual be produced to walk a user through a search; others stated that CD-ROM is good way for giving users direct access to DROLS data without concern for online costs. The most gratifying comment was from a site who said: "A SUPER product — patrons love it. If we had a complete set of files on CD-ROM, we would not need dial-up access, which we have now only as a back-up to the dedicated system." Eight respondents did not reply to this question.

CHAPTER 2

ISSUES ENCOUNTERED IN PRODUCING AND INSTALLING DISC

a. Modifications to System Files

When we received the CD-ROM disc from Online Computer, we ran the installation program and attempted to access the disc. A cryptic error message appeared on the screen. After several more unsuccessful attempts to install the disc, we called the vendor and learned that modification to two system files, "config.sys" and "autoexec.bat", was necessary. These modifications were simple to make but, without extensive computer knowledge, a user would not know what was needed. We had assumed that the installation program supplied with the disc would be sufficient to get the disc ready for use, but it was not. Several test sites, as well as DTIC-E, encountered this problem.

b. Incompatible Devices Drivers

Since all test sites had already installed a CD-ROM reader and most were using commercial CD-ROM discs, we were surprised to learn that some sites needed a new device driver to run the DTIC disc. (A device driver is a computer program that contains the necessary low-level instructions to access data on a disc. It is installed in memory as an extension of MS-DOS.) We discovered that many CD-ROM discs come with their own device drivers, which are often not compatible with those from other publishers.

We learned from Online which drivers were needed for readers installed at the test sites.

Since all TRADOC sites use the same brand of CD-ROM reader, HQ TRADOC was able to provide the necessary driver to all sites. Other sites with driver problems were addressed on a case-by-case basis.

c. Vendor Support Included with Disc

Upon encountering the device driver problem, we hoped to obtain the necessary drivers from Online. We then learned that drivers are generally purchased with

CD-ROM hardware, not with software applications. Since Online sells only Sony CD hardware, they could provide only Sony drivers; since most test sites had either Philips or Hitachi drivers, Online could not help.

We were also uncertain how much installation support was included in the contract. We paid for four hours of support to install the reader at DTIC but nothing for other sites. So when other sites had difficulty installing the disc, we relied on Online only for problems which we could not solve ourselves. In some cases they were helpful, in other cases they did not respond.

d. Test Site Personnel Inexperienced with CD-ROM and Personal Computers (PCs)

Many test site personnel who attempted to install the disc were inexperienced not only with CD-ROM but with PCs as well. When we told sites that the system files must be modified, some said that they did not know how to use (or did not have available) software for making the modifications (including word processing software). Many personnel were also unfamiliar with the system files themselves and needed to be led blindly through the modifications, not really understanding what the changes meant.

e. Inaccurate DROLS Data

On the disc, a user can view inverted indices of many DROLS data fields. Upon browsing these lists, we discovered many errors in the TR data. Errors ranged from simple spelling mistakes to fields whose entire contents consisted of a single letter or punctuation mark. A decision must be made as to whether DTIC wishes to correct the data in DROLS or to correct it only on future CD-ROM discs.

f. Vendor Delay in Delivering Discs

Online Computer originally promised to have the prototype discs ready in mid-October 1988, in ample time for the Annual DTIC User Conference in November 1988. Because of inadequate computer time and the volume of TR data to be mastered, the due date slipped several times. The discs were eventually delivered in January 1989. Since the disc being produced was only a test product, the delay was tolerable. However, if DTIC produces a production disc, such delays might be unacceptable.

CHAPTER 3

ISSUES TO CONSIDER CONCERNING A PRODUCTION DISC

a. Production Options

DTIC has three production options for future CD-ROM discs: (1) establish a contract with Online Computer Systems for all services, (2) establish a contract with another systems integrator for all services, or (3) perform premastering in-house, using special CD-ROM hardware, and have a vendor perform only mastering and disc replication. Each option is described below.

Option #1: .Online Computer Systems

DTIC's simplest option is to have Online Computer produce future discs. Online would act as a full-service integrator, as they did for the prototype, providing data reformatting, user interface customization, premastering, mastering, and disc replication. If requested, they would also provide custom documentation and limited training. The advantages of this option are that it minimizes risk (since Online has demonstrated their ability to deliver a quality product), offers relatively known costs (assuming that future costs do not differ greatly from the prototype costs), and provides a product that test sites found useful and easy to use. Since Online's services may no longer be available through FEDLINK, DTIC may need to establish its own contract.

Option #2: Another Systems Integrator

A second option is to obtain these same services from another vendor. This option will probably be more expensive than the first because the new vendor would be starting from scratch and would need to develop programs to reformat DROLS data and customize the user interface, which Online has already done. The chosen vendor must offer the most important retrieval features offered by Online as well as a few additional features named by the survey respondents, such as an expanded search workspace.

Option #3: In-House Development and Vendor Mastering

A third option calls for DTIC to perform data clean-up and premastering in-house (using a product such as "CD Publisher"); purchase a license for retrieval software; and have a vendor master and replicate the discs. Each of these steps involves special requirements.

First, DTIC would purchase "CD Publisher," or other product, to prepare a data base for mastering and to simulate the data base's performance on CD-ROM. "CD Publisher" would permit DTIC to test variables, such as number of searchable fields or browsable indexes, to achieve maximum performance before committing to a mastered disc. The cost of a 1200 Mb "CD Publisher" system is \$41,815 from the GSA schedule.

Next, DTIC would license a retrieval package, such as KnowledgeSet, Personal Library Software, or HP Laser Retrieve, to use with the disc. (Since Online Computer does not license their software, the retrieval package used with the prototype disc would not be available.) Annual license fees vary greatly, from a few thousand dollars up to \$100,000; some companies charge a fixed annual rate, others charge a minimum fee plus a royalty for each installed site.

DTIC should continue relying on a vendor to perform the final step – mastering and replication – because of the very expensive equipment and highly specialized personnel required.

Option #3 would require funding for "CD Publisher" and the retrieval software license, as well as for additional DTIC staff required for data correction and premastering, data clean-up, and user support. We estimate that clean-up and premastering will require one person-month of CD-ROM staff time per disc – thus, a quarterly product would require four person-months per year. For user support, a support person could initially divide their time between CD-ROM and DROLS. As the CD-ROM product becomes more widely used and the demand for support increases, the support person would answer only CD-ROM questions.

DTIC should consider option #3 only after committing itself to producing an ongoing CD-ROM product, developing in-house production expertise, and exercising more control over the production process. Until then, DTIC should choose one of the

first two options; guidelines for choosing a vendor are provided below in "d. Choosing a Vendor."

b. Production Costs

The cost of producing the prototype was approximately \$37,000. This included the cost of database development (converting more than 6 years of data from DROLS format to Online's format, indexing the data, and developing format displays), user interface modifications, premastering, mastering, replication of 100 discs, 8 software license fees, one day of training at DTIC-SPO, and vendor project management.

If DTIC were to add CD-ROM to its product list, two types of costs would be incurred: (1) ongoing and (2) one-time.

The primary one-time cost would be for customization of the disc. If DTIC requires extensive changes to the user interface of the retrieval software used with the disc, the changes would be paid for once but would be available for all future discs. Since only minor changes were needed for the prototype disc, modification costs amounted to only a few thousand dollars.

Most costs of a production product will be ongoing; that is, they will be incurred would the production of each newly mastered disc. These costs include database development, premastering, mastering, replication of discs, and project management. Two of the prototype tasks listed above could be avoided. First, DTIC could save the cost of software licenses by charging users for it, possibly through FEDLINK as was done for some test sites. Second, since virtually all users felt that the disc was easy to learn, perhaps DTIC need not offer formal training, thus saving the training cost. Subtracting these items from the total cost of the prototype leaves a balance of between \$30,000 and \$35,000. If the disc were produced quarterly by Online, the annual cost of production would be between \$120,000 and \$140,000. If another vendor were chosen, the costs could vary greatly from these figures. If DTIC purchased "CD Publisher" and paid a vendor for only mastering and disc replication, the cost for those tasks would be between \$10,000 and \$15,000 per year for a quarterly product, plus the cost of "CD Publisher."

c. Pricing the Disc

There are at least four methods for DTIC to set the price of a CD-ROM product:

- Based on what users are willing to pay. DTIC could set a price based on what it believes users are willing to pay. Using responses to the evaluation survey, users appear to be willing to pay between \$300 and \$750 for a subscription to a disc produced quarterly or semi-annually.
- Based on DTIC costs. With this method, DTIC would attempt to recoup a predetermined portion of its costs through sales of the disc. At first, it is unlikely that all costs could be recovered because the disc would neither sell enough copies nor be priced estimating the number of customers.
- Based on the average price of commercial CD-ROM products. DTIC could also price its product in line with other bibliographic CD-ROM products. Given the price distribution of currently available products, DTIC would price its disc at under \$1000 per year and probably closer to \$500 per year.
- Based on the price of NTIS CD-ROM. The CD-ROM product most comparable to DROLS is the NTIS disc. Last year Dialog began offering NTIS data on CD-ROM. The cost is \$2,350 for the current file which includes a disc containing the most recent four years of data (1985-89), quarterly updates, search and telecommunications software, documentation, telephone search assistance, and shipping. The complete file (data from 1980 to present) is also available, for \$3,600.

Silverplatter's version of NTIS provides the last five years of data. Its cost is \$2,250 per year, and includes search software, documentation, hotline support, and quarterly updates.

These costs are much higher than the price which any test site would be willing to pay.

d. Selecting a Vendor

We used the following guidelines in selecting a vendor for the prototype disc and suggest that DTIC do likewise for the production disc. We believe that the first three items are especially important and recommend that DTIC place special emphasis on them.

- Does the vendor's retrieval software offer the features needed, such as keyword access, full Boolean searching, truncation, proximity searches, and numerical range searches?

Given DROLS users' extensive experience with retrieval software, DTIC must choose a full-function package which offers at least these features.

Few other considerations are as important as the choice of retrieval software.

- Is the vendor's user interface easy to learn/does it make intuitive sense? Is it already well known to users (through other products)? Can it be customized?

The simplicity of Online's user interface was a major factor in our choosing them. We found "Books in Print" (BIP) very simple to learn and we discovered that many DROLS users also used BIP and were therefore already familiar with the interface. After testing the prototype disc, every survey respondent said that it was easy to use.

- Does the vendor offer a full range of services from data clean-up and user interface modification to mastering and disc replication?

Until DTIC develops in-house capability, one vendor should be chosen to provide all needed services. That vendor may need to subcontract, as Online did for disc mastering, but DTIC would deal only with the prime contractor.

- Has the vendor mastered other bibliographic databases? Since most major integrators have mastered bibliographic databases, this requirement should not prove a limitation.
- Is the vendor familiar with optical disc hardware? Have they developed their own controller cards? Do they sell optical hardware? Do they offer turnkey systems, including installation, training, documentation, and maintenance?

We believed that a vendor's familiarity with all aspects of optical disc hardware and software would be beneficial to the project. This is not a crucial factor, but a useful one.

- Is the vendor familiar with the DROLS data format (or with the COSATI format)?

Online Computer had worked with NTIS data and was therefore familiar with the COSATI format. This may have minimized the time and effort needed to develop a conversion program from DROLS format to Online's format.

- Is the vendor willing to examine a sample of DTIC's data in order to give an accurate estimate of costs?

Online analyzed a sample of DROLS data to estimate the overhead rate for inverted indexes and to determine the accuracy of the data. This information enabled them to estimate production costs more accurately.

- Are the vendor's services available through a central procurement source, such as FEDLINK, or will DTIC need to issue an RFP?

Using the FEDLINK contract simplified the procurement and allowed us to focus on the technical aspects of the project. This service will probably not be available through FEDLINK in the future.

- Is the vendor located in the Washington, D.C. area? Since Online is a local company, we were able to have face-to-face meetings and to deliver/pickup material on short notice. Online was also able to offer training without charging for travel costs.

e. Target Users

When the prototype disc was demonstrated at the DTIC User Conference last October, many contractors expressed interest in obtaining the disc. Since the test was limited to DoD DROLS users only, we were not permitted to provide them a disc. We recommend that DTIC explore the possibility of making a CD-ROM product available to all registered users, including contractors. Doing so would benefit DTIC in at least three ways: (1) increased use of the disc by library staffs would reduce use of DROLS; this could result in improved performance for all online users; (2) the more copies of the disc that are sold, the more likely that DTIC can recover its costs; and (3) based on the positive comments received about the prototype, increased distribution of the disc would enhance DTIC's image and demonstrate its commitment to serving all its customers.

f. User Support Which DTIC Must Offer

DTIC must consider offering two types of CD-ROM support: installation support and operations support. First, based on the experience gained from the prototype, users will have many problems installing the disc on their personal computers. Some of these problems can be avoided by including detailed instructions with the disc, especially guidelines on modifying system files (see section 2b above). In addition, before a new CD-ROM is distributed to users, DTIC should determine which device drivers are needed to run the disc on the 3 major brands of CD readers (Hitachi, Sony, Philips/LMSI) and should provide a means for users to procure the necessary drivers. (If users are running more than one CD application on a single personal computer, they may need to load a different driver for each application. DTIC should develop and disseminate a procedure for doing this.)

Even if detailed instructions are included, many inexperienced users will probably have problems and will call for help. DTIC must be prepared to offer telephone assistance in diagnosing problems and suggesting solutions. Since some

sites do not have word processing software on the PC used for CD-ROM and do not know how to use the DOS editor (EDLIN), DTIC should determine a method of altering system files which all users can utilize. Since most IBM-compatible personal computers are equipped with EDLIN, we recommend that DTIC become familiar enough with it to help untrained users use it for the necessary file modifications.

Second, once a user has installed the disc, DTIC must answer questions about its use. For example, users may have questions about performing searches, browsing the inverted indices, or printing a bibliography. These questions are generally simpler than the installation questions – the answers would often be found in the user manual. Of the questions we received from users of the prototype disc, installation questions outnumbered operations questions by a ratio of at least 10:1.

g. Suggested Disc Changes

We recommend that DTIC personnel closely review the DROLS data to be mastered before producing the next CD-ROM disc. The prototype disc contained many data errors and inconsistencies because DROLS data errors were not detected and corrected. The most egregious errors on the prototype disc were fields whose value consisted entirely of punctuation characters or which included an initial blank space. Ideally, these errors would be corrected in the TR data base before the data is downloaded for mastering. Alternatively, the errors could be corrected on the vendor's computer during premastering. The simplest way of detecting these errors is to review the inverted indices of field values. Most vendors producing customized CD-ROMs encourage the customer to browse the inverted indices before a disc is mastered.

In addition, we recommend that DTIC evaluate the following user-requested changes: (1) expand search workspace to permit more than 12 previous searches, (2) add DROLS search hierarchy to the disc, and (3) devise a means of tagging items and transmitting orders to DROLS from CD-ROM. All changes would need to be negotiated with Online or other vendor chosen.

Other recommended changes concerning target users, user support, and data to master are discussed in other sections of this chapter.

h. Data to Master

For its next disc, we recommend that DTIC again master as much recent data as can fit on a single disc (approximately 5 to 6 years of TR data). Given the diversity of interests among DROLS users, this subset of the TR data base best serves most users. Alternative subsets, such as citations within selected field and groups, would not serve as many users.

Given the test sites' interest in historic TR data (more than 60 percent of the sites expressed interest in a multiple disc product), DTIC should consider mastering at least 2 discs – one with the most recent 5–6 years and a second disc with the previous 5–6 years. Four respondents requested that 30 years of data (or the complete file) be mastered; this volume of data would require approximately 7 CD-ROM discs.

Several users also requested that DTIC produce WUIS and IR&D CD-ROMs in addition to the TR CD-ROM.

i. Other Recommendations

Although we anticipate that DTIC will provide direct support to disc users, it is unclear what support the vendor will offer DTIC, especially for problems not easily categorized as either hardware-related or software-related. Before producing another disc, we recommend that DTIC establish a clear understanding with the vendor concerning software support.

We encountered this problem with the prototype disc (concerning incompatible device drivers) and were unsure whether Online Computer was responsible for assisting us or not. For types of support not offered by the vendor, DTIC may need to identify other sources for help.

We also recommend that DTIC install three CD-ROM readers, one from each major manufacturer (Sony, Hitachi, Philips/LMSI), for use by DTIC CD-ROM hotline support personnel.

Lastly, we recommend that DTIC consider including penalties in the vendor contract for delayed delivery of discs. Online Computer originally promised to deliver the prototype discs in mid-October 1988 (in time for the DTIC User Conference); delivery did not occur until early January 1989. A shortage in Online's

computer processing caused the delay. Since DTIC was mastering over 500 megabytes of data (including indices), Online needed to devote its only processor to the disc for several days. Online had several lower volume discs to produce for other customers and we suspect that they delayed the DTIC disc in order to meet these other commitments. To avoid similar problems in the future, a penalty clause may be necessary. This could not be done with the prototype disc because DTIC used FEDLINK contract, which could not be modified.

j. Conclusion

We believe that a DTIC CD-ROM product would be useful, well received, and image enhancing. We recommend that DTIC commit itself to such a product.

During the first year, DTIC should emphasize user support, especially for first-time CD-ROM users. As discussed earlier, the most common user problems will probably involve installation of the disc. DTIC must have trained user support personnel who can lead naive users through a successful installation over the telephone.

Once DTIC has established sound user support, it should analyze alternative production methods and decide whether to develop an in-house production capability.

APPENDIX A

COMPILATION OF CD-ROM EVALUATION SURVEY RESPONSES

In this Appendix we provide a compilation of all responses to the CD-ROM evaluation survey distributed by DTIC to the test sites. Each respondent is assigned a letter code; a key to the codes is provided on the final page of the Appendix.

1. How is the CD-ROM being used at your site?

(ACDEFGHIJLMNPQRSTUVWXYZ-
AA,BB)
(ACFGHIJLMPQRSTXY)
(BCM)
(GHIKOSUWXYZ,AA,CC)
(FMT)

- a. For bibliographic searches
- b. For document identification
- c. For cataloging
- d. For evaluation purposes
- e. Other uses (specify): (F) Inventory of our agency's documents in system; (M) Demonstrate to other information professional and to combat developers; (T) Teaching.

(DD)

[Blank]

2a. What other CD-ROM products do you use?

Books in Print (A) (B) (C) (D) (Q) (R) (S) (T) (U) (W)
Ulrich's (A) (B)
Grolier's Encyclopedia (A)
Microsoft Bookshelf (A)
ERIC (E) (F)
OCLC Search CD450 - ERIC (O)
NTIS from Dialog (P)
IEE/IEEE on Disc (R)
Wilson Line (R)
Computer Library (R)
PC-Sig (R)
Reader's Guide (U)
Applied Science and Technology (U)
NTIS (U)
Government Printing Office (U)
Bibliofile (W)
EBSCO Serials Directory (W) (X)
LC-Subjects (CDMARC Subjects) (W) (X)
None (G) (H) (I) (J) (K) (L) (M) (N) (Y) (Z) (BB) (CC) (DD)
Blank (AA)

2b. How does the DTIC disc compare to them?

- (A) About the same, have same format, easy to use
- (B) Same
- (C) Pretty similar
- (D) Not yet installed
- (E) Better software and (apparent) search software
- (F) Better - retrieval is faster; more online immediate help; more browsing capability - more fields
- (G) (H) (I) (J) (K) (L) (M) (N) N/A
- (O) Very similar, somewhat more complex, but then the records are more complex
- (P) We find the Dialog product easier to use
- (Q) Same format
- (R) Average - the IEE/IEEE would seem to be an approach DTIC should consider seriously
- (S) Similar search software

- (T) Pretty similar
- (U) Similar to Books in Print in appearance (i.e. same pulldown windows). Provides more information and searchable fields than Reader's Guide and Applied Science & Technology
- (V) Good
- (W) Very similar, no color (dislike), can leave without going to action menu (like)
- (X) Similar -- which is very good as carry-over knowledge can be used.
- (Y) (Z) (BB) (CC) N/A
- (AA) [Blank]

3. Who used the DTIC CD-ROM at your site?

- (A) Library technicians
- (B) Librarians and library technicians
- (C) Reference Librarian/Document Cataloger (same person)
- (D) Administrative technician
- (E) Me (librarian provided instruction and manual and I used software and CD)
- (F) Library staff -- professional and technician patrons
- (G) (H) (I) Supervisory Librarian and 2 Reference Librarians
- (J) Library staff for the prototype/test initially. Plan for primary use of CD-ROM disc by library's patrons
- (K) Myself
- (L) Reference Librarians
- (M) Reference Librarian
- (N) Reference Librarian on behalf of students and faculty.
- (O) Librarian only
- (P) Librarians, when DTIC report file is down (an all-too-often occurrence), and end users. Library offered and advertised free training every Tuesday at 1400 for anyone who wanted to attend.
- (Q) Reference Librarian
- (R) Library personnel
- (S) Three reference/literature searchers
- (T) Reference Librarians
- (U) Library Reference Staff
- (V) Reference Librarians
- (W) [Blank]
- (X) Librarians and a few selected patrons.
- (Y) (Z) (AA) Reference staff only
- (BB) Document reference personnel
- (CC) [Blank]
- (DD) N/A

4. How much time did you spend using the disc?

- | | |
|------------------------------|--------------------------|
| (W,AA) | a. Less than 1 hour |
| (CDHIJKLOQSTVX,CC,DD) | b. Between 1 and 5 hours |
| (RUZ,BB) | c. 5 to 10 hours |
| (BEFGMNPY) | d. More than 10 hours |
| (A) Less than one hour a day | |

5. What brand and model of CD-ROM reader did you install the DTIC disc on? (circle the appropriate choice)

Sony (None)
Hitachi (APRSTVWXYZ,BB,CC,DD)
Philips/LMSI (ACDFGHIJKLMNOPQU)
Blank (E) (AA)

6. What type of monitor did you Use with the disc?

(ABPQRSTU) a. color
(CDEFGHIKLMORVWYZ- b. monochrome
BB,CC,DD)
(AA) [Blank]

7. What type of drives does your PC have?

All sites had a hard drive and at least one floppy drive.
No sites had only floppy drives.

8. What help did you need in installing the disc? (If you did not install the disc yourself, answer "N/A".)

- (A) Lots, did not send software for proper installation
- (B) Went along very easily with materials included
- (C) (D) (E) N/A
- (F) None, once it worked (modified for Phillips CM100)
- (G) Initial installation disk did not provide system software for our CD-ROM player Basic drive installation no problem. IM office installed driver. After proper system software was received, program worked. (We are a TRADOC library.)
- (H) Initially, package from DTIC did not provide system software for our CD-ROM player (similar problem with other TRADOC libraries with same model player). Basic installation was not problem, our Academy IM office personnel installed drive After correct software was received, player/program worked.
- (I) The initial installation disk did not provide function of the system.
- (J) Assisted by the School's Computer Training Center chief after additional software was received.
- (K) I didn't install it, but I had to help reinstall it after we discovered that an undefined custom report wouldn't retrieve a full citation, just a blank window.
- (L) Needed assistance with changes to the "config.sys" and "autoexec.bat" files Received help from Dennis O'Connor.
- (M) (N) (O) N/A
- (P) No help from DTIC, so I had to figure it out myself. I had to change the "config sys" file All in all not an unpleasant or difficult experience.
- (Q) N/A
- (R) Driver sent by DTIC no good - used driver sent by supplier of CD-ROM, installed with help of Computer Library CD-ROM technical personnel; Online service poor
- (S) Hitachi purchased from Bowker for BIP had to acquire a device driver for DTIC CD-ROM - Bowker driver didn't work
- (T) We did not have the proper drivers to load the disk. After receiving MS-DOS Extensions we were fine. This caused a lot of confusion and time delays.

- (U) Several phone calls to DTIC along with help from an in-house expert on CD-ROM. We needed different device line [in system files] in order to operate the DTIC CD-ROM and still operate all of our other CD-ROMs.
- (V) (W) (X) (Y) (Z) (AA) (BB) (DD) None
- (CC) [Blank]

9. Were you satisfied with the documentation?

- (A) Yes, once the software program was installed
- (B) Yes
- (C) Pretty much
- (D) [Blank]
- (E) No. Need in-depth support to take advantage of "hidden" features
- (F) As a draft, yes. For real, no. Needs to be more specific in some areas. Ex: how to go back and change Custom Format.
- (G) On the whole, yes. Based on our problems with installation, need to give complete error listing with explanation of errors.
- (H) Yes.
- (I) Yes, based on our problems with installation. There is a need for a complete error listing.
- (J) Yes
- (K) See answer to question 8. There should be documentation for installation that explains what the result of a choice will be.
- (L) For the most part, although I felt that the differences between the search and browse modes were not as clearly enumerated as they could have been.
- (M) Yes, though it lacks an index, and table of contents did not include all page numbers.
- (N) Problems were initially encountered interfacing the PC and the CD-ROM player. We waited several weeks before the device driver was received. However, once this item was received, installation was easily accomplished and the documentation was satisfactory.
- (O) Yes
- (P) The documentation was all right. Could give better examples at printing multiple citations.
- (Q) Yes
- (R) Installation procedures very poor
- (S) Yes
- (T) The problem described in question 8 could have been avoided had the documentation or DTIC support mentioned the need. Error in documentation concerning function key commands.
- (U) Needed more help than what was provided in the "Getting Started" section.
- (V) Didn't see any -- made it work without seeing it.
- (W) Did not use.
- (X) Yes, clear and concise.
- (Y) Only partially; some parts seem to be missing
- (Z) Could be improved
- (AA) Didn't know we had documentation when I searched it.
- (BB) Yes
- (CC) [Blank]
- (DD) N/A

10. Did you find the interface easy to learn?

All sites replied "Yes", except (Z) which offered only a comment, (AA) who answered "No" with a comment, and (DD) who answered "n/a."

- Comments:
- (E) I am a computer type — easy to learn/use
 - (I) Overall, yes. Tends to get a little complex from one window to the next.
 - (J) Probably because previous searching experience was with DROLS: direct, online
 - (M) The windows helped immensely in using the command language.
 - (P) Yes, but not as easy as the Dialog product.
 - (R) IEE/IEEE and Wilson Disc use of Basic index is preferable for average user
 - (T) Had exposure through BIP and online searching (DIALOG)
 - (U) It is similar to Bowker's Books in Print CD-ROM.
 - (Y) System has advantages and disadvantages [discussed in detail on sheets attached to this survey.
 - (Z) Too time consuming to use compared to DROLS.
 - (AA) I didn't realize I had gone into Expert. I should have told it to go into Novice.

11. Was the interface easy to use?

All sites replied "Yes", except (T) who answered "yes" and "no", (Z) who responded with only a comment, (AA) who responded with bewilderment ("???"), and (DD) who responded "N/A."

- Comments:
- (E) Need mouse interface. Need to run from "Windows/Desqview"
 - (F) When compared to dial-up DTIC, this is faster and easier to use by observation, since I have never used dial-up accession to the system.
 - (J) Have yet to evaluate how easy s find it to use
 - (T) The interface is easy to use but if you are used to a dedicated command structure, the interface is a bit of a nuisance. Too many windows, too slow, too many keystroke combinations to maneuver.
 - (Z) Awkward to use.

12. What was most useful about the disc?

- (A) Easy format to use, search time options, amount of time saved searching, amount of time online saved
- (B) Easy formatting of printouts and ability to print unattended
- (C) Mnemonic format
- (D) Great money savings. Windows extremely nice. Windows make it easy for a novice like myself to search expertly.
- (E) Disc is not useful, software is, information is. What was most useful? access to DTIC citations. I could torture the data base in perverse and illogical search conjunctions — different combinations of keywords found/uncovered different (and useful) information. Great feature: saving citations to floppy for word processing.
- (F)
 - a. Searching by keyword and report number in multiple fields at once
 - b. Browsing brief citations-several at once
 - c. Having file available at ALL times — no transmissions problems, DTIC down-time, etc.
 - d. Menu driven
 - e. Windows providing search commands and use of highlight bars to select rather than rekey
 - f. Capability to print and to download to disk

- (G) Increased speed of searching; ease of searching; ability to combine search strategies compared to online searching.
- (H) Searching was easier, compared with dedicated or dial-up modes. Loved all those windows.
- (I) Limitation of time frame.
- (J) Verification of document limitations and classifications prior to ordering: subject searching
- (K) Being able to search without wondering if DTIC would be up, or if there would be garbage on the phone lines
- (L) See comments to question 18
- (M) The pull-down windows and option windows accessible at almost any time the system was running was the most useful feature.
- (N) Most useful was disc's easy accessibility and browsing capabilities without concern for online costs, telecommunications problems, etc. Help screen were very useful at the novice level. Ability to activate menus with "Alt" keys from any point in the program was also useful.
- (O) I am most satisfied with the CD and can see its usefulness to "some s." However, it is no substitute for online access. If utilization can justify the cost, online is the only way to go.
- (P) The ability to have a backup to the online system and a way for end s to use the system without using our terminal.
- (Q) The ability to have access to DTIC when DROLS connections cannot be made.
- (R) Ability to use it with contractors – use in places not tied to modem or crypto
- (S) Additional displays, defined displays, browse mode, searching combined author and numeric and report series fields, key word searches each field key word indexed
- (T) The ability to set up a strategy before going into dial up mode (if our dedicated line was out). Not having to use role codes (however then you need to learn the indexes). The numeric field designation is wonderful as is abstract searching.
- (U) Using browse search to search corporate authors.
- (V) Ease of use. Help screens online – not having to wade through a manual.
- (W) [Blank]
- (X) N/A
- (Z) Since the disc contains the DROLS/DTIC information, why was the DTIC search method not used???
- (AA) No communication problems; the files available whenever we needed it.
- (CC) I liked when you used 2 key words with "and" it would do combination steps automatically for you.
- (DD) [Blank]

13. What was least useful?

- (A) Blank
- (B) Subject searching limited due to small number of sets which can be retained at one time.
- (C) ""?
- (D) Question: Is CD as current as DROLS?
- (E) Need to be able to customize format (no info in manual). Need to save data selected after brief citations.
- (F)
 - a. Combining sets by "cs = "; this was cumbersome
 - b. Limitation of 12 sets in memory
 - c. No holding symbols, field 49
- (G) Limited timeframe of documents on disc; default search format is not clearly separated on disc; installation procedures would indicate that user would not see "expert" as default setting on screens after "novice" setting had been chosen upon installation; custom format display is a problem.

- (H) Did not know range of holdings included on disk, time frame, etc.
- (I) Default searching format is not clearly separated on the disk. The custom format feature presented problem.
- (J) For staff, the use of "novice" mode
- (K) [Blank]
- (L) Inability to order documents directly (though I realize this is impossible without an online system).
- (M) Cannot search multiple word phrases as keywords, must search individual words and then combine them.
Could not print search strategy unless used the computer's print screen function – and that produced a messy page.
- (N) Least useful was the limited screen size for building searches – disliked having to delete. Disliked having to press "F9" in the novice mode before starting each search.
- (O) My organization requires access to classified data. Can this be accommodated? Quarterly update not current enough for our purposes.
- (P) The limited scope of the product. Would like to have all DTIC files on CD-ROM.
- (Q) Title search was awkward.
- (R) Crosslink to inverted file
- (S) Incomplete data base, WUIS and IR&D data bases not available, DROLS hierarchy feature not available
- (T) Need more flexibility in the Report Date query – to select ranges. Too many windowing features when the data is being searched.
- (U) Not being able to enter a title without having to break it up into keywords to search for it.
- (V) (W) (Y) (AA) [Blank]
- (X) N/A
- (BB) Lack of space for search terms
- (CC) (DD) [Blank]

14. What functions should be added to the disc?

- (A) Capability to order documents, bibliographies
- (B) Expanded time periods
- (C) Panic "stop" key when in the middle of printing. "Esc" didn't seem to work. May I just shut off the printer while it's running?
- (D) [Blank]
- (E) Add mouse interface. Add Window/Desqview interface. Assign unused functions keys to "additional" features.
- (F) More years – 10 year span if possible; Field 49 – holding symbol; See 19 below
- (G) Sorting
- (H) Sort
- (I) None right off hand. Sorting perhaps.
- (J) (K) [Blank]
- (L) Hierarchy function
- (M) Hierarchy, if possible.
- (N) Uncertain at this time.
- (O) [Blank]
- (P) N/A
- (Q) [Blank]
- (R) A standard bibliographic citation output – DTIC online output is the worst in the field and was preserved on the disc even though BIP has good output.
- (S) Hierarchy
- (T) Not necessarily a function but because of the popularity of the mouse, all IBM windowing software eventually will be mouse controlled. There are so many different software

(U) Title searching in the browse mode. Title searching as a title in addition to the keyword search in title (i.e., first 5 words as in DROLS).

(V)(W)(X)(Y)(Z)[Blank]

(AA) Combine set #'s like in Dialog; use similar search techniques as Dialog; Limiting to individual years (i.e. "L +/1987:1989")

(BB) The ability to search more terms on a screen and display results.

(CC)(DD)[Blank]

a. quarterly (A)	\$300 – 750	(FGHIJKN)	\$750 – 1,500	(EPSTU)	\$1,500 + (AA)
b. semi-annually	\$300 – 750	(DGHJKQS)	\$750 – 1,500	(EU)	\$1,500 + (AA)
c. yearly (C)	\$300 – 750	(HJKMSU)	\$750 – 1,500	(DEFGI)	\$1,500 + (AA)

(ADKLPU,BB)
(BCEFGHIJMNPRST-
VXZ,AA,CC,DD)

a. a single disc with the most recent 5-6 years of data
b. multiple discs containing recent and historic data
(If you selected b., how many years of historic data
would interest you?)

(B) 20 – 25 years
(C) 25 years
(E) 15 years
(F) 30 years – complete file
(G) (H) (I) 25 years
(J) 10 years
(M) All years
(N) At least 20 years
(P) All years
(R) [Blank]
(S) 10 years
(T) 35 years
(V) 20 years
(Z) All years
(AA) 30 years
(CC) (DD) [Blank]

A-9

All sites replied that AD number was acceptable, except for:

- (C) Report date, perhaps
- (F) Report date; would like choice, defined by
- (G) (H) (I) Optional or title, author, date
- (T) Year/report date
- (V) (W) (DD) [Blank]

18. What features of the DTIC CD-ROM did you like better than DROLS?

- (A) Speed of information retrieval
- (B) Much faster
- (C) No online time cost pressure; No awkward keying-in @STR@ each time; Fewer commands, etc. to memorize
- (D) Windows. Being able to work at Novice or Expert level. Since our organization deals with several databases, it's sometimes difficult to remember all operations and search keys. The Novice format simplifies everything.
- (E) [Blank]
- (F) See question 12 above; also, browsing other fields, especially Corporate Author, Report Number, and Keyword, and being able to select directly without having to retype
- (G) Ability to combine search sets; speed of system; truncation; ability to select display records
- (H) Ability to combine search sets; windows, improved truncation
- (I) Same as survey (G)
- (J) Its availability to Library's staff cost-savings when used by staff in place of online searches
- (K) [Blank. Respondent never searched DROLS -- see question 21.]
- (L) The "CS" mnemonic which allows you to combine the results of previous searches. The lack of this function in the DROLS database was my biggest complaint.
- (M) No down-time, speed of access. In some cases I found more materials on the CD-ROM than a similar search of DROLS (for same time-frame), perhaps because of broader search using individual key words.
- (N) Ease of access to system and ability to browse without online fee. Posting browse statements to search workspace. Collection of data on one disc; defined custom format; ability to change and choose new formats quickly.
- (O) Dependability
- (P) Thank you for not entering those rotten role codes. Being able to search all numeric fields at one time is wonderful. Browsing feature is great.
- (Q) Quick access
- (R) Searching -- standard ASCII file downloaded
- (S) See question 12.
- (T) No role codes, ability to search the abstracts
- (U) The ability to search corporate authors by name, not source code.
- (V) Ease of retrieval. No complicated hook-up, ... to go through.
- (W) (X) (Y) [Blank]
- (Z) None.
- (AA) Menus are helpful in CD-ROM; they are better than nothing.
- (BB) None
- (CC) (DD) [Blank]

19. What features of DROLS do you like better than the CD-ROM?

- (A) Ability to view current work units, order documents
- (B) None

- (C) More current (latest information); more sophisticated search parameters
- (D) Being able to order online
- (E) [Blank]
- (F) Hierarchy search – corporate author and DRIT terms
- (G) Continuous scroll display of records
- (H) Ability to view in "scroll" display mode, unlimited holdings.
- (I) Same as survey (G).
- (J) Searching is more retrospective; searching techniques/protocols seem more direct
- (K) [Blank. Respondent never searched DROLS – see question 21.]
- (L) Hierarchy function
- (M) Can search multiple words and multiple levels without overloading save space; if delete a term from space have destroyed search; can search multiple descriptors, identifiers, and keywords in one search with fewer keystrokes. Can search hierarchy, multiple words and levels, entire database or current 10 years, can print search strategy, and order from search result immediately or create a file.
- (N) Greater ability to build search – disliked limited screen workplace on CD-ROM. Like ease of ordering reports online. Access to full database.
- (O) Currency, complete files available, single source searching
- (P) NONE. . . except of course that it has all the recent data so we can't do without it.
- (Q) Search strategy
- (R) Sorting; depth of coverage
- (S) See question 13. Also, option of searching either recent or historical data. Switching files: TR, WUIS, IR&D.
- (T) I don't like the clutter of a windowing interface.
- (U) The ability to search ALL databases in DROLS along with access to any daily reports.
- (V) More current.
- (W) (X) (Y) [Blank]
- (Z) All
- (AA) None
- (BB) Everything
- (CC) (DD) [Blank]

20. In general, how did CD-ROM retrieval times compare to retrieval times using DROLS?

- (F*JT*Z,BB) a. CD-ROM was slower than DROLS
- (LO*,AA) b. CD-ROM was about the same as DROLS
- (CDF*NQSUV) c. CD-ROM was somewhat faster than DROLS
- (ABGHIMPRT*) d. CD-ROM was significantly faster than DROLS
- (EKWX,CC,DD) [Blank]
- * (F) CD was slower for subject queries especially, but faster for some fields
- * (O) About the same as DROLS when DROLS is working, which these days is most of the time
- * (T) CD-ROM was significantly faster than dial-up but slower than dedicated line.

21. Any other comments, suggestions, or problems?

- (A) (B) (C) (D) Blank
- (E) After viewing citations (according to format) you return to "Brief Citations". Selected "Full Citations" disappear.
Would like to have a way to retain selected citations upon return to "search workspace".
Use Function keys to allow to remove selected "brief keys".

[Note from Julie Gibson, Librarian, concerning survey 6: Sorry this is late, but one of our patrons wanted to give you some feedback. Regardless of how he answered the questions, please keep in mind that he has NOT ever used the dedicated or dial-up himself – only through the library staff.

Regarding questions 13: We never got the Custom Format set up and I wasn't sure how to go back in and do it without having to reinstall. Manual does not tell how.]

- (F) Get a CD-ROM to s ASAP, as complete as possible (all years of TR file and work units) and as inexpensively as possible.

A SUPER product – patrons love it.

If we had a complete set of files on CD-ROM, we would not need dial-up access, which we now have only as a back-up to dedicated system.

Explore possibility of classified and for limited distribution CD-ROM products – we need classified abstracts, complete descriptor and identifier fields, access to IR&D file, etc.

Include some kind of symbol to show that info has been omitted (classified, etc.) so knows more could be obtained from dedicated/classified system

[The following note was attached to survey 6: This is our evaluation of the CD-ROM test. If you have questions regarding my comments, please call. We can't wait for the "real thing". It's a super product. Assuming it won't be free, we hope it will be chargeable to our NTIS account. Please include U.S. in any future tests. Signed, Julie Gibson, Librarian]

[Julie also attached a note, with examples, concerning duplicate AD numbers on CD-ROM.]

- (G) A training manual or a search problem that would walk a new or inexperienced through a complete search: the problem, the search, displays, prints.

- (H) Could a walk-through search be included for new users, as: problem, search, displays, prints.

- (I) Same as survey (G).

- (J) [Blank]

- (K) I have never searched DROLS, only been around people who have. Also, our DTIC disc was only installed 2 weeks ago, because the Supervisory Librarian and I are both very recent transfers to this library. We have experienced some problems with the CD drive that may or may not be particular to the DTIC prototype.

Also, when I entered "de=repair?" I got 7 hits; when I entered "de=repair" I got 1669 hits. There seems to be a problem with using the "?" for truncation. I was trying to retrieve "repair" and "repairs."

- (L) The delay in getting the disc operational (see question 8), and a staffing shortage at this library meant that I did not have much time to work with the program. However, I do believe that it is a much improved system over DROLS.

- (M) Password typed to screen should be invisible. No method of changing password. [This respondent also attached a copy of a memo (sent to HQ TRADOC) which summarized her responses to the survey.]

- (N) [Blank]

- (O) I suspect the CD product could be of use to some s. We have access to ERIC online, for example, but use the CD version almost exclusively. It's current enough for most of our s purposes and the end can "play" with it to his heart's desire at virtually no cost. Neither of these advantages apply to DTIC on CD for our organization, but may for others.

- (P) (Q) [Blank]

- (R) Classification of combined subjects. The online search system seems to be slower than most. Limited number of sets (Wilson Line allows over 35 sets and one can combine 7 in complex Boolean logic at once). IEE/IEEE logic is more precise. [NRL also attached a letter with additional comments about the CD-ROM.]

- (S) I would only use CD-ROM if DROLS not available, to search number fields, authors, key words not found in DROLS and for all key word searches. Suggest you consider

producing discs for COSATI fields and groups which include historical data back to beginning of data base.

- (T) What kind of CD-ROM drives will you support; the standalone soft 5.25 inch or the in chassis hard CD-ROM drive. If I didn't have a dedicated line, I would use the dial-up. However, because that is so slow, I would resort to the CD-ROM more often.
- (U) Additional examples of searches in the manual and a keyword index.
- (V) (W) [Blank]
- (X) Highly recommended for staff use in small libraries with limited funds or dial-up terminals.
Highly recommended for patron use in libraries with staff to monitor searches.
- (Y) [Blank]
- (Z) Not enough search workspace; search options are too cumbersome to use; prefer the DROLS direct approach searching; CD-ROM could be beneficial in small libraries or as a backup system; DROLS is so much easier and faster to use.
- (AA) (BB) (CC) [Blank]
- (DD) Easy access for searching DTIC. Very comfortable experience.

SURVEY RESPONDENTS

- (A) U.S. Army Military Police School (Ramsey Library), Ft McClellan, AL
- (B) Air Force Weapons Laboratory, Albuquerque, NM
- (C) TRADOC Test and Experimentation Command, Ft Ord, CA
- (D) U.S. Army Intelligence School Library, Ft Devens, MA
- (E) U.S. Army TRADOC Analysis Command, White Sands MR, NM
- (F) U.S. Army TRADOC Analysis Command, White Sands MR, NM
- (G) U.S. Army Sergeants Major Academy, Ft Bliss, TX
- (H) U.S. Army Sergeants Major Academy, Ft Bliss, TX
- (I) U.S. Army Sergeants Major Academy, Ft Bliss, TX
- (J) U.S. Army ICS Library, Ft Huachuca, AZ
- (K) U.S. Army OMMCS Tech Library, Redstone Arsenal, AL
- (L) U.S. Army SC&FG, Ft Gordon, GA
- (M) U.S. Army Ordnance Center and School, Aberdeen Proving Ground, MD
- (N) U.S. Army Logistics Library, Ft Lee, VA
- (O) U.S. Army Armor School Library, Ft Knox, KY
- (P) Naval Surface Warfare Center (White Oak), Silver Spring, MD
- (Q) U.S. Army IS Technical Library, FT Benning, GA
- (R) Naval Research Laboratory, Washington, DC
- (S) Naval Weapons Center, China Lake, CA
- (T) Naval Weapons Center, China Lake, CA
- (U) National Security Agency, FT Meade, MD
- (V) U.S. Army Missile Command, Redstone Arsenal, AL
- (W) U.S. Army Missile Command, Redstone Arsenal, AL
- (X) U.S. Army Missile Command, Redstone Arsenal, AL
- (Y) U.S. Army Missile Command, Redstone Arsenal, AL
- (Z) U.S. Army Missile Command, Redstone Arsenal, AL
- (AA) U.S. Army Missile Command, Redstone Arsenal, AL
- (BB) U.S. Army Missile Command, Redstone Arsenal, AL
- (CC) U.S. Army Missile Command, Redstone Arsenal, AL
- (DD) U.S. Army Missile Command, Redstone Arsenal, AL